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THE PRACTICE OF GIANMATTEO ....

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THE PRACTICA OF GIANMATTEO FERRARI DA GRADI EDITIO PRINCEPS

By

Arnold C. Klebs, Nyon

ARS ꝑma Comẽtarij Textual Jn Nonũ Almãsoris Cũ Ampliacioĩb⁹ et Adicionibus Materierum per Magistrũ Joannem Matheũ Ex Ferrarijs De gradi Mediolanẽsem.

Ad medẽdi doctrĩe Jn qua etatem meã omnez consumpsi ul laboze ul negligẽtia uidear deffuisse. Et Jn ꝑmis in Jllustrim parentem tuũ amoz Jlle meu⁹ cui semper coniuncta fuit reuerẽtia summa et deuotio singlaris ĩ te ei⁹ ꝑmogenitũ ⁊ tãtũ ꝑncipẽ

Thus beginneth this book. Very few have seen it in this form. It appeared in two large folios, weighing nearly twenty five pounds. Many will find it cumbersome and harder to read than some manuscripts, and of less historic value. Obviously such appreciations are relative. It is the purpose of this article to show that among medical incunabula this one holds a unique position and that its composition evoked efforts worthy of record. In this period of the "resuscitation of Learning" the author had no other aims than those we have. He wanted to add his share to human knowledge and moreover he and his associates collaborated to reproduce it by a mechanical process entirely unknown heretofore. If the book seems unmanageable and not readily legible we must not forget that the range of science Gianmatteo tried to cover for his time, in ours has reached dimensions and, for some of us, degrees of illegibility far greater than these incunabula.

In points of record among medical documents the Editio princeps of Gianmatteo's Practica scores heavily. Whatever we may think of its contents, it is one of the most important books of which we have definite information, for it is the first medical book of large size ever printed, and of the fifth or sixth of the medical books of any size to which we can assign a definite date appearance[1]. As to contents, it gave in printed form for the first time a commentary on the great school book on therapeutics, Rhazes' "ninth book to Almansor", with fragments of its text and, with Bagellardo's short treatise on children's diseases, it is also the first printed work written by a contemporary. Incunabula may be nothing else but manuscripts multiplied by the press in the last half of the fifteenth century. Often it is asserted that their study can reveal nothing that is not revealed by manuscripts. Never having studied manuscripts systematically, I cannot tell if this is so. I can only tell what the study of incunabula has revealed to me. All sources of a given time, that throw light on conditions as they really were, must appeal to the historian. He must be free from conventional shackles, wandering Siegfriedlike through virgin forests, listening to the twittering of the birds, to the "Waldweben", able to understand

[1] Scholderer's list: "Medical books printed before 1481", will soon form an indispensable basis for future studies of medical incunabula. It is in press and will appear with a discussion of the subject by the late Sir William Osler who had hoped to present it when the war came to interrupt and retard the arduous task of bibliographic comparison and verification. I have to thank Mr. Scholderer for placing at my disposal the proof sheets and for helping me in every possible way, by letter as well as personally in the Department of Printed Books of the British Museum.

their songs, after the example of the master whom we wish to honor this day. From his "Deutsche Inkunabeln" he has extracted a wealth of light and it was he also who insisted that in the future it will be necessary that any one who wishes to study the development of medicine in the fifteenth century will have to pay particular attention to the commentaries on Rhazes and others.

The text of Rhazes' book to Almansor by itself was printed only in 1481. It was not pressing, for medical men then knew it by heart, and the commentators, especially at first, gave of the text only the beginnings of sentences after the pattern of bible exegesis or the "Magister Sententiarum". Two members of the faculty of Pavia years before Gianmatteo's day, Syllano de' Negri and Giovanni Concoreggio, had written treatises based on the "Almansor". They, as well as Gerard de Solo's commentary were still used in the afternoon lectures on practical medicine as "ad lecturam Almansoris". But the moderns began to appeal, Giovanni Arcolani at their head. But of all these commentaries Ferrari da Gradi's was printed the first, four years before Syllano's and eight years before Arcolani's[1]. Much later, two "ultra-moderns", Jacques Dubois "Sylvius" and Vesalius, still found it worth while to add their wisdom to that of Rhases' Almansor (Paris 1545 and Louvain 1537).

Of the life and work of Gianmatteo Ferrari da Gradi, a nineteenth century descendant of his has given us such abundant information that they will not have to detain us here, further than to supply what later search has brought to light[2]. We shall not try to judge what absolute value his Practica and other works may have, we can only record what reception it had by his contemporaries and recall the esteem in which he was held during his forty years connection with the School of Pavia and at the ducal courts of the last Visconti and their two successors, Francesco and Galeazzo Maria Sforza, all of whom frequently resided at the Castello of Pavia, and entrusted their health and that

[1] Syllano de Negri's commentary was printed in Padua, 8 June 1476, by B[artholomaeus] V[aldezochio] and is described by Scholderer (No. 110) after the probably unique copy of the work in the library of Sir William Osler. Arcolani's issued from the press of [P. Maufer], also in Padua, about 1 May 1480. (Scholderer No. 200.)

[2] Henry-Maxime Ferrari da Gradi: Une chaire de Médecine au XVe siècle, un professeur à l'Université de Pavie de 1432 à 1472 (Thèse, Faculté de Médecine, prés. Charles Richet) Paris, Alcan, 1899, 8°. This book has been delightfully transcribed for an Eranus lecture at Cambridge by Sir Clifford Allbutt and recently published with his „Greek Medicine in Rome", London, 1921.

of their families to the professional care of Gianmatteo and his assistants.

Neither the description, nor the facsimiles which appear in the cited thesis of H.-M. Ferrari, were taken from a copy of the Editio Princeps. Both are from the Lyon edition of 1519 of which the author happened to possess a copy. I shall therefore give a new description with facsimiles:

Giov. Mat. Ferrari da Gradi: Practica, sive commentarium textuale [Rhazis] in Nonum Almansoris cum ampliationibus et additionibus materierum. *No date, place or printers name.*

Folio. 2 columns. 50 lines. Pars I: 244 leaves, the first blank. Unsigned quires: $1—9^{10}$ 10^{8} 11^{12} 12^{8} 13^{12} 14^{8} 15^{12} 16^{8} 29—24^{10} 25^{6}. Pars II: 268 leaves, the first and last blank. Unsigned quires: $1—12^{10}$ 13^{12} 14—26^{10} 27^{6}.

Gothic type (Haebler M. 41) 111—112 mm. Capital spaces of 2—8 lines, without guide letters. Wire mark: Rosette, 8 petals, ca. 50 mm.

Pars I: Begins on 2a. col. I with Title (see facsimile, page)

11a. col. 1 begins:

mč cbulitiõc. ſz ſi un[a] fuerit turbida ⁊ manč turbida č ſignū ꝺemõſtratiuū pñtis doloris capitis max[e] in febrib[9] ⁊ non exñte nocu[to] in aijs urine nz ĩ criſi ficꝺa aliquocičs p urinā ſi uero fuerit turbida micta ⁊ clarificet ſig[ar]

244a. col. I line 45 End:

ſete crauc añ.ɜ.ȷ.miſſ/poteſtis ēt cū floñb[9] mioſ. et roſ.et ſilib[9] facč ſaclos a ꝑꝑatos apo[oo] alias me[nas] calas ul fridas ſz exigētiā/ ſaclos extrāho ſiue calc[oo].s̃.lapiꝺc calz uino aſpſuz et ſuppo[oo] pectori ĩ medio ei[9] declinan[o] ad ꝑtē ſiniſtrā.⁊[c] ſit finis hui[9] ca[l] de cardiaca paſſione cū dei laude. Et ɔſequēter hui[9] p[e] ꝑns.

Pars II: Begins on 2a. col. I: [I] Lustrissime et excellentissime prīceps ‖ domine mi singularissime ɔc . . . . *line 32:*

. . . Ex papia die. 9. m̄sis octobris. 1471. *11a. col. I:* nigela q̄ oīa calefaciūt cū ɔfortatione . . . *267a. col. 2. line 29 Colophon:* Jnceptuʒ p magistruʒ marchuʒde gatinaria ānо ‖ 1462. die 17. octobris finituʒ in studio. d. Mri Johannis Matthei. huiꝰ operis ɔpositoris anno ‖1471. die. 25. Septembris. *Below begins index of chapters for both parts, beginning with:* . . . primum de soda in fol'. j. *and ending 267b. col. 2. line 34:* Cam 35m de dore q sit ī locis maīfestis ī fol'. 286.

Copies: of Pars I (only) Stuttgart, Landesbibliothek; Nyon, A. C. K. (dedicated to Surgeon General's Library, Washington), of Pars II (only) Washington; Surgeon General's Library; Paris, Bibliothèque nationale; Liechtenstein, Fürstl. Fideikommiß Bibliothek. (See note at end.)

This book has been much discussed by bibliographers without any one having solved the various problems it presents. Most curious of all is that none of those who wrote about it had seen a complete copy of it[1]. The date of 1471 occurring in the colophon and at the end of the preface of the second volume, this year was thought to be that of the impression of the work. But as De la Serna Santander already noticed, these dates occur also in a later edition printed in Pavia in 1497, so that he came to doubt the existence of the edition, believing the earlier date to be that of the manuscript[2]. But this part of the uncertainty has vanished. With this genuine copy of the first part and photographs from the copy of the second part in the Surgeon General's Library of Washington, D. C. before me, we are able to analyze the complete edition. Besides the two copies (Paris, Washington) of the second part, there is one other, also of the second part alone, in the Fürstlich Liechtenstein Bibliothek and apparently one copy exists of the first part alone in the Stuttgart Landes-Bibliothek, a duplicate of which must be the copy in my possession. Thus we know at the present moment only two complete copies to have survived the vicissitudes of 450 years and even these are not complete in any one library, their halves being widely

[1] M. Boni, Lett. sulla stampa dell'Italia super. 45 ss., may have seen both parts. From what Deschamps, Dict. de géographie 1870 col. 1238, says about it (I have not been able to consult Boni in the original) it appears he had a work of „572 pp." before him. Since the 2 volumes embrace 244 and 268 leaves respectively, the number of pages of the 2nd (= 536) comes nearest to his figure. All the other information may have been derived from Vol. II, and since he misprints other figures, his description is of little help.

[2] De la Serna Santander, Dict. bibliograph. du XVe siècle II, 454.

separated[1]. Most strange of all is the fact that neither the Brera and the Ambrosiana at Milan nor any of the Pavia libraries I have searched, possess any copies.

The two volumes together appeared once, however, in the catalogue of a well-known Munich firm of antiquaries. The description of this apparently unique copy, derived herefrom, was included by Reichling in his Appendices to Hain[2]. What has become of this copy is not known. The late Sir William Osler, who was always on the look-out for rare medical books, has a note opposite the entry of this edition in his catalogue, which may refer to this copy. Dr. W. W. Francis has kindly called my attention to it. It reads: "I missed a copy at Rosenthal's Sept. 09. That voracious monster Pierrepont Morgan had bought it." A characteristic sigh of the disappointed book hunter! But in the Morgan Library, where I have examined and photographed many rare items, I never came across this book. In the catalogue of the collection and in Winship's Census of Fifteenth Century Books in America (1919) no mention is made of it. Curiously enough the copy of the first part which has come into my possession can also be traced to the firm from whose catalogue Reichling took his description.

Both parts of the work have separate dedicatory prefaces, the contents of which we will now have to consider. The first part begins with a brief title in which Gianmatteo describes himself as "Mediolanensis" (see facsimile). The preface is addressed, without mention of any name, to his princely master — only the "Vale diue Cesar" at the end allows us to surmise this. He speaks of him as the firstborn of his great father to whom he had dedicated his commentary on the 22nd fen of the 3rd book of Avicenna's Canon, in which work "those diseases are treated which often are found to befall princes and recognizable by an inspection of the urines[3]". Then Ambrosius Griffus is mentioned, also a

[1] The bibliographic references for this work are Hain 7836 (without details since he had never seen a copy). Pellechet-Polain 5284, Bohatta, Liechtenstein 110. (Both of Part II only.) For information about the existence of the copy in the Landesbibliothek, Stuttgart, I have to thank Dr. Crous of the Kommission für den Gesamtkatalog für Wiegendrucke, who kindly supplied it from the files of that institution.

[2] Reichling, Appendices ad Hain-Copingeri Repertorium Bibliographicum, München 1906—1914, II p. 177, from cat. CV No. 1177. Ludw. Rosenthal, Munich, with facsimile. From which Scholderer 37.

[3] First printed with the tractatus de urinis, Milan: Iac. de S. Nazario de la Ripa 1494, 26 July, fol., then again in the same year by the same press without this tractate on 17 November. Reichling II, 178 and Hain *7840, Pellechet-Polain 5286, Carbonelli Bibliographia med. Piedmont., saec. XV—XVI, 122 & 121.

physician of the same prince, to whom, Gianmatteo says, he had previously dedicated his commentary on the 2nd fen of the first book of Avicenna's Canon[1]. Then he outlines the advantages of the work by Rhazes which deals with all the diseases that can befall the mortal "a vertice ipso ad calces usque"; a most useful treatise but dangerous without a proper commentary.

Also in his dedicatory preface to the second part, Gianmatteo carefully avoids calling his prince by name. He is happy now to have terminated the second part of this work, referring to his dedication of the first part „quam superioribus proxime annis amplissimo nomine tuo dedicaui". The mention of the illustrious son Hermes and his family which he was attending in the absence of the prince, and the date at the end „Ex Papia die 9 mensis octobris 1471[2], fix the personality of the prince to whom the work is dedicated, the place and date of the preface. The prince is Galeazzo Maria Sforza, the eldest son of the great condottiere who usurped the power in Milan in 1450, that is, of Francesco and his wife Bianca Maria Visconti, the illegitimate daughter of Filippo Maria Visconti, last of his line (1412—1447). Galeazzo became Duke of Milan on the death of his father in 1466. He was cruel and dissipated but patronized arts and sciences after the fashion set by the other princely houses of the time.

The statement at the end of the second part: "Begun by Marcus Gatinaria on October 17, 1462, and finished in the study of the 'composer' of the work, Gianmatteo, on September 24, 1471," has led to all sorts of conjectures. Some bibliographers (Tiraboschi, Boni) have thought that it fixes the date of the impression as 1471, others (Comi, Magento) believed that it indicates that Gianmatteo himself, with the help of Marcus Gatinaria and with a local printer's advice, had printed the book in his own house. Ferrari adopts the latter hypothesis and, in addition, believes that the printing of the first part was begun in 1462, and that it was issued some time before the second part, which he conjectures left Gianmatteo's, the compositor's, printing office in October 1471. This would make this book, or at least its first part, the first of any books printed in Italy, Sweynheym and Pannartz having set up their press at Santa Scholastica in Subiaco only in 1463.

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[1] Apparently not printed.

[2] In a series of letters during the years 1471 and 1472 Gianmatteo reports regularly from the Castello in Pavia to his lord in Milan, on the state of health of his children, Giangaleazzo, Hermes and Clara. (See Ferrari, pièces annexes, op. cit. p. 323 s.)

This theory, built on sandy ground by an enthusiastic descendant of Gianmatteo, has not found acceptance, the postscript being held to refer entirely to the composition of the manuscript and having nothing to do with the printing of this edition. Nevertheless the fact remains that the two volumes are rarely if ever found together, hence the printing might well have been done at different times, that of the first naturally preceding that of the second. That nine years should have been needed for the printing of the two volumes seems scarcely probable, while the preparation and writing of it may well have consumed this time. The first part, according to Gianmatteo's note in the second preface and also according to internal evidence, as we have seen, was dedicated to Galeazzo. This at once excludes the date of 1462 as having any possible connection with the appearance of the book either in manuscript or printed form, for Galeazzo became Duke only in 1466. Ferrari[1] calls attention to a letter which Galeazzo wrote from Galijate on the 23 November 1469 to the castellano of Pavia, asking him to send to him by courier the "opera" which Gianmatteo had given him a few days before, „in uno volume coverto de rosso". Ferrari's suggestion that this might refer to a printed copy of the first part, has some degree of plausibility if there was no other evidence against it. There is no objection to accepting this date as a likely one for the dedication of the manuscript of the first part to Galeazzo.

The mention of Gatinaria's name in the colophon is very unusual indeed. There must have been some good reason which induced Gianmatteo Ferrari to acknowledge so conspicuously his share in the work. We know very little about his life, but his work is well known and in the annals of medicine in the beginning of the XVIth century it figures creditably. He is usually ranged among the Arabistic class of writers and we have from his hand a Practica de curis aegritudinum particularium, also based on Rhazes' ninth book to Almansor, which enjoyed a very great popularity, not without real merit for it presents in condensed form a great mass of practical therapeutic information checked up throughout by personal experiences. The author shows himself well read, citing the Ancients and Arabic transmitters and their commentators, but he is particularly interesting to us because of his constant references to contemporaries. Most frequently he cites those of Pavia and Milan, especially Gianmatteo da Gradi. Nic. Falcucci, Ant. Guaineri, Giov. Marliani, Cesare Landulfo,

[1] Ferrari, op. cit. p. 63.

Giov. Arcolani, Giov. Gringelli, Alois and Francisco Busco, Pietro de la Trinitate, Blasio Astariis are also referred to, so that Gatinaria's book forms an indispensable guide to the Pavia school of his time. In his chosen field of therapeutics he impresses one distinctly as a modern and he has his marked place in the evolution of thought and practice. He merits decidedly more attention than is given him in modern historical textbooks.

Gatinaria's Practica appears in print only some years after his death[1]. From 1504, when the first edition appeared in Lyon, until 1639, we can count twenty editions of the book, ten of them from French presses, mostly at Lyon, seven from Italian presses (only one from Pavia 1509) and three from Basel and Frankfurt. In most of these editions this Practica is accompanied by other writings form the pen of some of Gatinaria's colleagues at Pavia: Blasio de'Astariis and Cesare Landulfo on fevers. Also the syphilis tract of Sebastiano d'Aquila is added sometimes. Besides these editions Jacobus Sylvius is responsible for two others in a combination with Galenic therapeutics (Paris 1545 and Lyon 1549). René Moreau, in his life of Sylvius (Paris 1561), although he describes him as the "maximus osor" of Arabic medicine, has to admit that nine hundred copies of this book were sold in a few days. At Lyon it was probably due to the potent stimulus of Symphorien Champier that so many medical books from Italian sources and notably from the Pavia school were reprinted in the early part of the century[2].

Ferrari da Gradi's Practica, up to 1560, saw only nine editions, all appearing in Italy with the exception of two at Lyon. That Gatinaria's work, which endured so much longer, should have had to wait forty years from its author's first mention before it was printed, is rather remarkable. Once more a reference is made to him in another book of the incunabula period: in a little known edition of Mesue, the first book printed at Lyon by Martin Huss and Johann Syber[3]. This book is dated 31 March 1478 and in the colophon it is stated to be extracted from the original, corrected and emendated by the distinguished and expert medical doctors "Alme universitatis papiensis Magistrum Johannem Theobaldi, Magistrum Marchum de Papia, etc". The same notice,

[1] Bonino in his Biografia med. Piemontese, Torino, 1824, p. 101, gives the date 14 February 1496. According to him, Gatinaria hailed from Vercelli.

[2] See in Allut's admirable Étude sur Symphorien Champier, the amusing account of his relations with the medical faculty at Pavia. (Lyon 1859, p. 22 s.)

[3] Noted by Claudin, Histoire de l'imprimerie en France, III, p. 155, with facsimiles.

appears in the edition of the Mesue described only as part of the Antidotarium of Nicolaus Salernitanus, [Strasburg, Prüss, ca. 1485]. Hain *11763.

I have found no trace of this Johannes Theobaldus in Pavia. His association with Marcus of Papia, who is undoubtedly our Gatinaria, may have taken place solely in the mind of the Lyon publisher. The possible relationship offers some interest, for this Theobaldus, who elsewhere is styled "Ebroicus", i. e. of Evreux, may well be the Jean Thiebault whom the medical faculty of Paris pursued as "empiricus indoctissimus" early in the XVI. century. Tollin has brought to light some interesting documents about this quarrel. He was interested in him because of his relation to Michel Servet, and it seems evident that he had won recognition as an able plague physician and by his professional connection with the courts of Louis XII and François I[2].

The note in the colophon of the Mesue "extracted from the original" brings up the question as to the possibility of Gatinaria's having translated from the Arabic this work and also Rhazes' ninth Almansor, the latter for Ferrari da Gradi's Practica. And this is indeed maintained by several authors and made to explain Gatinaria's mention with the date of 1462. This is of course possible, but in the case of Mesue highly improbable, for we know not one Arabic manuscript of his works. Of Rhazes' work the translation by Gerard of Cremona was highly esteemed and sufficient. Gatinaria in one chapter of his Practica finds fault with Gerard's translation of the Arabic "chachile" with "cardamomum" and corrects it by "soldanella" (Lyon Ed. 1532 fol. 36a).

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[1] Prof. Sórigo will publish a detailed description of this edition. Briefly stated it is as follows:
Mesue: Grabadin. Edited by Johannes Theobaldus, Marcus de Papia etc. (Strassburg, Joh. Prüss ca. 1483.)
Folio. 48 leaves, first blank. 2 columns, 39 lines. No signatures, six quires of eight leaves. Gothic types. Haebler and Proctor: Prüss No. 1. (Haebler's M 57. 99—100 mm.) used only in 1483—4.
1a Johannis Mesue Grabadin In || cipit Quod est aggregacio ζ an = || tidotarium electuariorum et cō || fectionum. ||
48a Colophon: Presens opus Johannis Mesue || extractum ab originali correctū || necno emendatum p egregios ac expertos medicine doctores Al = || me Vniuersitatis papiep magi = || strum Marcum de papia Finit ||
Reference: The edition was noted by Choulant, Bücherkunde p. 357 (taken over by Copinger 4009). But evidently Choulant never saw a copy and though he does not give his source, conjectures: „wenig bekannt, wahrscheinlich das Antidotarium allein oder mit der Practica."

[2] Tollin in Virchow's Arch. 1879, p. 312, and Rohlf's Arch. 1880, III, p. 332.

That same "correction" having already been made in the "Pandectae" of Matt. Sylvaticus, he might have taken it from there. Gatinaria's opinions on nomenclature commanded respect for a long time in academic circles. Even Brunfels in his well known herbal cites him textually as an authority on terminology, but also this is to do honor more to his subtle argumentative talents than to his Arabic scholarship. And thus we must give up any such explanation for Gianmatteo's mentioning his young colleague so conspicuously at the completion of his magnum opus. It can only be sought in the personal relations and collaboration of the two men.

Gianmatteo, when the Practica came out, was at the end of his career. We do not know his age but judging from his long association with the Visconti before the advent of the Sforza and his forty years continuous teaching in the University, he must have approached his eightieth year. In 1471 he had made his will by which he established a college for students and left, with some of his books, the administration of his estate to the Hospital of S. Matteo. He seems also to have curtailed his teaching. While for years he held the most important chair, that of the theoretical lecture "de mane", with Giovanni Marliani as his second, the latter had superseded him in 1471 and 1472, and he seems to have been only nominally on the rotuli "ad lecturam Almansoris" with a stipendium of Fl. 700., which for some reason was not paid to him. Marliani receives Fl. 750., while his second, Manfredo Gargaglio, who now holds the place his present chief formerly occupied under Gianmatteo, is paid Fl. 200. The extraordinarii, subordinate to Gianmatteo, were Blasio de'Astariis, Marcus Gatinaria and Jo. Ant. de Bugatis. These latter, just as to-day, in Europe at least, had little chance to rise unless they were called away[1]. Gatinaria, especially after this epoch, seems to have remained stationary, former colleagues like Cesare de Landulfo and Lazaro de Dattaro having gone far ahead of him ten years later.

It was into this academic milieu, around the seventies of the quattrocento, that the news came of the new invention of copying books by printing, and it is very likely that all the younger members of the falculty were much interested in it. How and where the first printing experiments were made, whether in Pavia itself or in the

[1] The above data I have extracted from the files of the Pavia University at the State Archives in Milan. Not having much time I could only make some hurried notes from the documents most obligingly selected for my purpose by Prof. Vittani.

neighbouring metropolis, we do not know with certainty. I shall give below a resumé of the rumors about it that have come down to us. It will show mainly that a considerable activity prevailed and, what is of particular interest to us, that physicians participated in it. The interest in natural sciences was ever growing, the demand for readable texts was at its highest and the younger students and lecturers, whose academic training enabled them to write and correct texts, were naturally well fitted to assist the early printers who had in most instances come from abroad and were unacquainted with local requirements. It is undoubtedly such collaboration that made possible the appearance of the first books. That this took place in the milieu of academic life is also probable though we may have to concede that the actual printing was done in another place. Before October 1473 no press in Pavia is recorded. After this a press, under the name of one Sedriano, makes only an ephemeral appearance with a single book, then disappears. We shall have to return to it. For the present it may suffice to state that the type it employed is the same with which Gianmatteo's Practica was printed. But we find this same type also used for the printing of two other books. These are medical books and definitely stated in printers' notices as having been isued in Milan by one Filipo Lavagna earlier in 1473. Since Gianmatteo's Practica in its Editio princeps before us bears no other indications than that of its authorship and the milieu of its composition, and as we have seen, it is printed with the same type as the books assigned to Pavia and Milan, we will have to determine its origin by circumstantial evidence.

Fortunately an Italian bibliographer, Majocchi, has come to the rescue. By discovering some interesting documents in the Archives of Pavia he has been able to throw light on the question in an essay which so far has been little noticed[1]. The first document is an agreement before a notary, made and signed on the 4 January 1472 at the residence of our Gianmatteo Ferrari da Gradi between Gianmatteo himself as "fisicus ducalis" and party of the first part and Magister Filipo di Lavagna party of the second part. Witnesses to the agreement were Marcho de Gatinaria, Joh. Jac. de Bellatis de Rodobio and Math. de Ferrariis, son of the notary Ubertus in Pavia. Lavagna herein agrees to furnish Gianmatteo, at stipulated intervals, 100 "copias ad stampum" of the medical opus, the "Expositiones et ampliationes super

[1] Rodolfo Majocchi. L'introduzione della stampa a Pavia. In: Boll. della Soc. Pavese di Storia Patria. Pavia 1902, II, 66–86.

nono almanssoris" compiled by the latter. The work is estimated to take "circha" 50 quinternions (500 leaves). Of these Lavagna is to deliver 2 (20 leaves) by 10 February, 16 (160 leaves) by the end of March and the rest i. e. 32 (320 leaves) by the end of April[1]. Gianmatteo agrees to pay for the 100 copies at a rate to be fixed by an arbiter chosen by them in the person of the medical student Joh. Anton de Modoetia (Monza), between a minimum of five and a maximum of seven ducats per copy; i. e., five to seven hundred ducats for the whole lot, this sum to be paid to Lavagna within six months after the final term; viz., before the end of October. A penalty of 25 ducats is to be imposed for any term not kept by Lavagna. In the case of delivery being delayed by an epidemic ("regnaverit epidimia . . . quod Deus avertat") the payment can be postponed one year after delivery of the copies. Gianmatteo is to advance 25 ducats against receipt.

It is interesting to note here how the ever possible incidence of plague is taken into consideration in this legal document. Even the intensity of the epidemic is specified: "Item et etiam quod in casu dicte epidimie, quod ipse Magister Filipus non teneatur ad predicta, dummodo dicta epidimia sit tallis condicionis et ita notabillis quod laborari non possit". Lavagna is not allowed to sell, before the lapse of the six months after the delivery of the 100 copies, other copies to any persons except to "compositoribus et coadiuctoribus ad perficiendum dictas copias, non adveniente epidimia", or before the lapse of a year "adveniente epidimia". This must signify that the edition was not restricted to 100 copies. In view of the very few copies that have survived it is possible that Lavagna did not avail himself of this privilege and that the edition was indeed a very small one.

On 29 October 1472 Gianmatteo Ferrari and Lavagna draw up a further agreement, again in the former's house in Pavia, and before the same notary. I will give its text since Majocchi believes that it allows various interpretations[2]. Majocchi thinks that the document reveals the fact that Lavagna has failed, perhaps because

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[1] Majocchi here argues rightly that the incertitude about the numbers of quires required for the book speaks for its referring to a first and not a later edition. He also states that the book as we know it now comprises exactly 232 and 286 (misprinted 386) folio leaves. The correct number for the first part is 244.

[2] The document (Archivio Notarile di Pavia, Notaio G. B. de Vaylate, pacco 1472) begins with the usual introduction and a copy of the January agreement. I give here only the portion interesting us:

„. . . . Cumque etiam sit quod prefactus dominus Magister Joh. Matheus pretendat dictum Magistrum Filipum incurisse in penis de quibus supra propter traddicionem non factam in terminis de quibus supra, et ipse Magister Filipus

of an intervening plague, to carry out his part of the agreement of January and that the copies had not been delivered, possibly not even been printed. None the less Gianmatteo is agreeable to forego the penalties stipulated for such default plus the 25 ducats advanced and furthermore to pay down 600 ducats for which Lavagna agrees to furnish 125 copies instead of the 100 agreed upon "quasi compenso della renunzia ad esigere la penalità".

To understand this apparently ambiguous and onesided agreement it is well to remember that it is drawn up a few days before the term of the final payment due by Gianmatteo. By the stipulation in the agreement of the 4 January, Lavagna might be expected in Pavia just about that time to get payment for the delivered copies. The stipulation was: six months after the third and last instalment at the end of April, which is the end of October. The fact itself that Gianmatteo is agreeable to pay a considerable sum down, with certain new stipulations, is to my mind sufficient proof that he and his associates had already received the greater part of the promised copies and that this second agreement was concluded simply to adjust the final settlement. Gianmatteo says before the notary: „Lavagna owes the stipulated penalties because he has not made the deliveries of copies at the fixed intervals". To this accusation Lavagna makes objection "dicat contrarium". When two parties disagree so fundamentally it is very likely that they both exaggerate in their contentions. Hence friends intervene, together with Giov. Anton da Monza, the medical student who was made arbiter of the financial side of the former agreement. They do not even seem to have discussed in what particular Lavagna had failed, they simply settled the whole business, all of which seems to me to indicate that Lavagna's part of the contract was

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dicat contrarium; Et ob hoc suborta fuerit differentia inter dictas partes: Et vollentes ipse partes ab ea descedere, Sponte etc. intercessione amicorum et presertim dicti Magistri Joh. Antonii, devenerunt et deveniunt ad infrascriptas transactiones etc. Videlizet: Primo, quod ipse dominus Magister Joh. Matheus teneatur [remittere] et ita remitit dicto Magistro Filipo, dictas penas et ab eis ipsum liberat etc. salvis aliis contentis in dicto instrumento. [of 4 Jan. 1472.] Item quod ipse Magister Filipus teneatur et ita promitit traddere prefacto domino Magistro Joh. Matheo copias centum vigintiquinque dicti operis ad stampum ut supra, quibus habitis ipse dominus Magister Joh. Matheus teneatur et ita promitit dare et solvere, in terminis de quibus et prout in dicto instrumento continetur, dicto Magistro Filipo ducatos sexcentum auri et in auro ultra illos ducatos XXV de quibus et prout in dicto instrumento fit mentio, et rata pro rata ipsorum denariorum prout ipse Magister Filipus traddiderit dictas copias in terminis ut supra, ratis et firmis manentibus aliis contentis in dicto instrumento de quo supra fit mentio, salvis semper suprascriptis."

Witnesses were Marcus de Gatinaria, Matheus de Ferariis, son of Ubertus, and G. P. de Vaylate, notary.

practically fulfilled, that probably he had not kept closely to the exact dates provided for, that possibly also not the whole hundred copies were delivered until a short while before[1]. But it is evident, though not expressly stated, that Gianmatteo's claim for penalties was considered exaggerated by his friends and the arbiter, also that they persuaded him to settle the matter for good. By this settlement Gianmatteo was out of pocket 600 ducats plus 25 ducats advanced money, but he was to receive 25 additional copies which at six ducats a copy represented a value of 150 ducats more, thus bringing the actual price per copy paid by him to less than 5 ducats, wich is below the lower limit fixed by the original contract. This must have seemed to Gianmatteo a fair settlement, so that he could afford to forego the penalties to which he thought himself entitled[2].

Two months after this settlement Gianmatteo died. Majocchi is able to fix the date exactly, 30 December 1472, by a notarial document. The administrators of the Hospital of S. Matteo of Pavia, having fallen heir to part of Gianmatteo's estate, are called upon by Lavagna on 7 February 1473 to pay him on Gianmatteo's behalf 40 ducats "pro certis ex dictis operibus venditis per dictum quondam dominum Magistrum Johannem Matheum", this "ad festum carnis priori proxime futurum", which I think would be 10 February[3], viz., three days later. According to Majocchi the vice minister of the hospital, Paolo Beretta, had agreed the day before (6 February) to Lavagna's demand.

Gianmatteo having died without settling the matter[4], it seems clear that this last document was drawn up simply to ratify the vice president's promise. It offers therefore nothing of particular interest in the affair except that it is thereby closed definitely.

A short while ago I searched with Prof. Ducceschi's amiable assistance every corner of the library in S. Matteo for books and documents which might throw additional light on the typographical side of Gianmatteo's life work. The room was still there as he had seen it, looking out on to the cortile whose picturesque arcades

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[1] Majocchi himself reveals the interesting fact that in the text of the Practica II, at the end of the chapter De fluxibus, the date 30 Aug. 1472 appears, making it likely that even at so late a date something was changed or added. It is quite possible that this was done during the printing and it suggests that the process was closely watched by the author and others concerned in the work.

[2] Ferrari op. cit. p. 94 cites a document which shows that on 26 Oct. 1474 a copy of the Practica was sold for four ducats to a medical student.

[3] See document Majocchi, op. cit. p. 76.

[4] Majocchi, l. c. p. 76, also states that the head of the hospital board had agreed to restitute to Lavagna copies of the book having remained with Gianmatteo, but nothing about this appears in the cited document.

surround, as with a frame of white and red, the verdure of a luxuriant vegetation. Gianmatteo's manuscripts and books had gone, probably with those of the great Sforza library in the Castello, in the pack train of the conquerors, to northern Touraine. A beautiful collection left here for us to examine, had been once Giov. Aless. Brambilla's (1728—1800) to whose efforts under the auspices of Maria Theresa and Joseph II the medical school of Pavia is still deeply indebted.

One point in the last document, however, still requires our attention. Lavagna is called therein specifically: "Magistrum a scripturis stampis". This resembles the formula "artis impressoriae magister", a title bestowed upon certain printers by some universities[1], but it does not necessarily follow that this was also an official title in Lavagna's case.

We shall have to return to this matter of Lavagna's professional qualification but I wish to discuss first another interesting document, brought to light also by Majocchi, which gives details about the press of Sedriano in Pavia. From it, as we have seen above issued on 30 October 1473 the Aretio, a legal book printed with the identical type of Gianmatteo's Practica. This document is an act establishing a corporation "in et pro conficiendo et compilando libros", which may well mean a printing shop. The act is drawn up — and this is of particular interest to us — on 29 October 1472, which is exactly the day that Gianmatteo and Lavagna came to a final settlement of their enterprise in book publishing and when copies of the completed Practica must have been before them. This act also is drawn up in the house of a Pavia physician, Manfredus de Guargaliis. Thus we have the second printing enterprise in Pavia headed by a physician. Threads unite it and that of Gianmatteo's and Gatinaria's preceding venture to one technical contractor as we have still to show in detail. But that two members of the same faculty and the same university should have contracted separately for the printing of books suggests that rivalries existed in the teaching corps and that the several members concerned in it were rapid in availing themselves of the new method of reproducing books. We have seen that Manfred de Guargaliis delivered in 1471 (and also in 1472) a theoretical morning lecture, with Giov. Marliani at the head of this most important department. Some years before, Marliani, in this same department, was second to Ferrari da

[1] Veldener for instance received it in 1474 at Louvain. Holtrop, Monuments typogr. des Pays-Bas, p. 48.

Gradi who now held another lectureship. Thus de Guargaliis at this time was subordinate to Marliani, similarily as Gatinaria had been before to da Gradi. It is very probable that Marliani was striving to become Ferrari da Gradi's successor, both on the academic staff and as physicus ducalis[1]. He was slated for this for long years, for when da Gradi in 1433 read on logics at the beginning of his academic career, Marliani was academic beadle. Both these men came from distinguished families and very likely held their places by virtue of their descent and associations. Their understudies, de Guargaliis and Gatinaria, had little chance to rise. Also in the printing undertakings they simply acted for their masters.

In the enterprise which the above mentioned act ratifies, de Guargaliis, very probably with Marliani's backing, figures as head, intellectually as well as financially. The second place is held by Giovanni de Sedriano, who is described as the son of Beltrami a citizen of Milan. He is apparently minor for he has to produce his father's permission to engage in the matter. The third partner in the enterprise is a student in arts and medicine at the Studio of Pavia, one Gunifortus de Regalibus. Sedriano's professional qualifications are not explicitly stated, he simply obligates himself to apply his person and intelligence "in conficiendo et compilando libros cuiuscumque facultatis", as directed by Manfred and Gunifort, from the day of the act for four years, for which he is to receive three ducats per month, which sum is to be deducted from the eventual profits, of which he is to receive one part, while Manfred is to have three and Gunifort two parts. In order to provide "res necessarius pro dictis libris conficiendis et fiendis ad requisitionem dicti Johannis", Manfred advances Liv. imp. 800. But Sedriano is not exclusively at the disposal of de Guargaliis and his other medical partner since they agree to allow him "succurrere Filipo de Lavania in arte predicta laboranti" in Milan. This assistance to Lavagna is limited to eight days, once, twice or three times per year, "vel circha" when asked for by Lavagna. This shows that in this company Lavagna plays the rôle of a silent partner.

Majocchi draws from all these documents the conclusion that the legend of Gianmatteo de Ferrari's Practica having been printed in Pavia in 1472, or its first part even earlier, must now be definitely abandoned. This book, he takes it for established, was printed by Lavagna in Milan. The honor of first having started a printing company in Pavia belongs, Majocchi concludes,

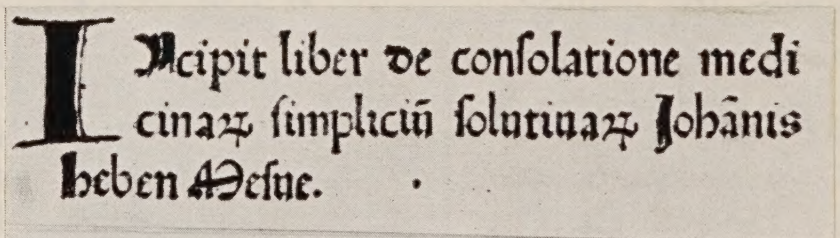
[1] In 1481 he occupies this position with Fl. 1000 salary.

to de Guargaliis in 1472, although he knows none of its products or how long it existed. We, however, having seen that a book has actually been produced by this company in Pavia and that it was printed with the identical types that had served for the composition of Gianmatteo's Practica, find it of primary interest to note that both these books owed their achievement to the initiative and assistance of medical men occupying important chairs at the University of Pavia. Furthermore, knowing that two other medical works, the Avicenna and Mesue, were printed with the same identical type (see facsimile description[1]), both after Gianmatteo's Practica and before the Aretio of de Guargaliis Sedriano's company, it follows that a common thread unites all four and that members of the University of Pavia have probably a more important share in the early history of printing than appears on the surface. The subscription of those who call themselves printers of the books in the colophon, must always be taken withmany grains of salt.

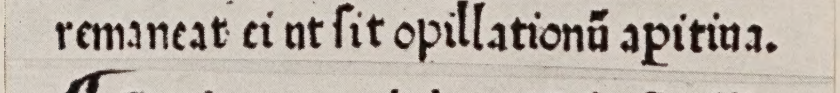
The sequence of appearance of these four books, all folios printed in two columns with the same type, would be as follows:

[1] **Mesue:** De consolatione medicinarum etc. Milan, Lavagna, 4. Aug. 1473. Fol.

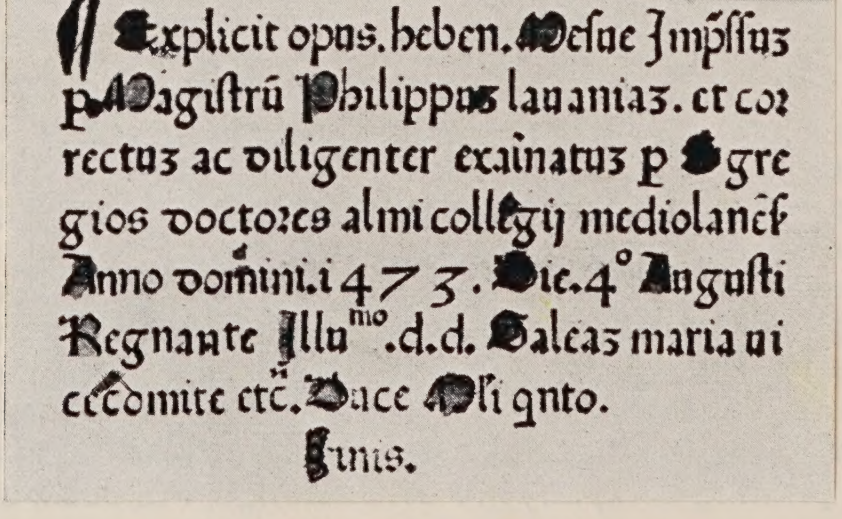
2a. col. 1:


Incipit liber de consolatione medicinarum simpliciū solutiuarum Johānis heben Mesue.

11a. col. 1:


remaneat ei ut sit opillationū aptiua.

155b. col. 2 Colophon:


Explicit opus. heben. Mesue Impssus p. Magistrū Philippus lauaniaz. et correctus ac diligenter exāinatus p egregios doctores almi collegij mediolanēs Anno dñi. i 473. die. 4° Augusti Regnante Illmo. d. d. Galeaz maria ui ccomite etc. Duce Mli qnto.

Finis.

Scholderer 36, Hain *11105. From copy Bibliothèque universitaire de Genève Kindness of Messrs Gardy and Delarue.

[1472 before Oct. 29.] **Ferrari da Gradi:** Practica (512 leaves, 50 lines).
1473 Feb. 12. Milan. **Avicenna:** Canon (572 leaves, 50 lines).
1473 Aug. 4. Milan. **Mesue:** Opera (156 leaves, 41 lines).
1473 Oct. 30. Pavia. **Aretio:** Institutiones (382 leaves, 50 lines).

Having now fixed the chronological sequence of these books we have to consider their technical typographical features[1]. The earliest dated medical books[2] were printed in Roman types. The humanistic vogue favored it but on the whole the Gothic which we find in the four books under consideration was more generally used for the early scientific works. The particular variation of this type must have been designed and cast by one man or possibly by two associates[3]. Type then was produced by the printer for

[1] The capital A with two cross strokes and the open D especially are very unusual. I have not been able to find them in any of the many facsimile works accessible to me. Proctor and Haebler (R. Proctor: Early printed books in the British Museum, London 1898—9, and Haebler, Typen Repertorium, 1905—22.) who have developed the modern system of type analysis, register it as type 2 of Lavagna, his first having been a Roman one. Haebler's M 41 classes it among his Gothic types, 20 full lines measuring 111 mm. The forms are set in two columns of 50 lines each, except in the Mesue in which the columns are narrower and closer together and have only 41 lines per leaf. Pinholes are found in the upper outside corner of each leaf, sometimes in pairs. They are the traces of the pin-points on which the earliest printers used to attach their sheets to the printing frame so as to prevent their slipping. Their position suggests that the press used was designed to print two pages at a time, a considerable technical improvement. The paper also is the same in the four works; it is a beautiful heavy and stiff material. It has a wire mark representing a rosette with eight petals (diameter about 50 mm.), frequently encountered in documents and books of Milan. It is considered of Lombard manufacture.

[2] Nicolaus: Antidotarium with Albucasis: Liber servitoris. Venice, Jenson. 1471 (Scholderer 8 and 7) and Mesue: Opera [Venice?] 9 June 1471 (Scholderer 10).

[3] The most striking feature of the types seems to me to be their family resemblance to types cast beyond the Alps for which the earliest printing shops at Mainz had given the model, and which were developed or modified by Mentelin in Strassburg and by his two associates, Adolf Rusch (the printer with the bizarre R) and Eggestein. To Eggestein's press in Strassburg are assigned, without definite date, the two earliest editions of a Practica judicialis by Giov. Pietro Ferrari of Pavia, a jurisconsult at Milan in the XV. century. The work saw twenty editions before 1501. I know nothing about the personal and familial relations of this author to our Gianmatteo. In reference works, bibliographical and other, they are usually separated, the physician being cited as de Gradi, the lawyer as Ferrari. H.-M. Ferrari does not speak of this lawyer as one of his ancestors. Evidently he occupied a position of great authority during Gianmatteo's lifetime.

use in his own press. Only a good deal later the casting of type for the general market became a practice. We must therefore assume that the same person has done the actual printing of the four books though it may well be that Sedriano had been instructed in the use of the press and replaced the creator of the type for the actual printing of the Aretio as the last of the series. But he cannot have been of much importance in it or we would have heard more of him. At any rate neither he nor anybody else used that type after the 30 October 1473.

The typographical features of these four books must have produced a certain sensation in interested quarters for I find that the type was copied and used in the following year and later. This, so far as I know, has not been noticed before. It may have escaped attention because only the minuscules were copied and new majuscules were designed and cast for the fount. There cannot be any question about the identity of the design of the minuscules. Their forms are the same and their size (111 mm. per 20 lines) is also the same. The book where we find this copied type is:

1474 Aug. 27. **Giov. Marliano:** De caliditate corporum humanorum, a folio of 62 leaves, 2 columns and 41 lines per page, with the imprint of Antonio Zaroto of Milan[1]. This book forms an interesting successor to the four previous ones, and it is difficult not to see some connection between them. It must be noted again that the new type, possibly as an improvement on the other which by this time was probably somewhat worn, was apparently cast expressly for this book of Marliano's, for it appears in it for the first time. The conclusion is almost inevitable that Marliano desired his book to be printed in similar style to the Practica of Gianmatteo, his predecessor in Pavia, and finding that for some reason or other neither Lavagna nor Sedriano could or would do it, he had it copied by the rival printing shop of Zaroto. Whatever these connections may mean, they show how little the statements of the so-called printers at the end of the books reveal of the full history of a book.

While it is thus demonstrated that the two men, Zaroto and Lavagna, who are accepted as the Milanese prototypographers, have had a share in the printing of these medical works, we cannot but feel that this honor is bestowed upon them almost solely on the basis of their own statements in the books themselves. For Zaroto perhaps it may be held that certain documents suggest that he had a hand in the technical and artistic development of

[1] See description and facsimile in Scholderer, op. cit. No. 58.

his press; of Lavagna, whose share interests us more directly in this question, this cannot be said. At any rate it is very interesting and perhaps significant how much the efforts of the medical men combined with those of the real printers who worked for Lavagna and others have promoted the art in Milan and Pavia This apparent cooperation in the very earliest period is so striking that I may be permitted to review briefly what is known of this phase of the local history of printing.

It is particularly to Motta[1] that we owe documentary evidence on the subject. None of the products of these efforts has, however, reached us, as Fumagalli says, "par une suite de circonstances singulières et inexplicables". Again it was a physician, one Antonio Caccia of Ceresole d'Alba, who by notarial act of March 1469 promised to teach a Milanese nobleman, Galeazzo Crivello, "scribere libros in forma cum impressione."[2] Then, on 30 April, the Milanese ambassador to Venice recommends to the authorities of Milan one Antonio Planella who wants to "fare dei libri a stampa", better ones than those of Rome. He received a five years privilege for printing but nothing is known of his having made use of it. On 30 May 1470 a German printer, name and place unknown, offers to come to Milan with twelve companions for the establishment of a press there. Nothing further is known of them.[3]

About the same time a man appears on the Milanese stage, another physician, Pamfilo Castaldo (of Feltre and Capo d'Istria), whose name has been the watchword of an ardent band of local patriots as the presumed inventor of movable types for printing. He has a statue at Feltre but his claim to the invention would need stronger proof than has thus far been adduced. Apparently he came to Milan at the request of the Duke in March 1472 and received a patent to establish a press, but for some reason or other he did not avail himself of the rights it conferred and returned to Venice

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[1] Rivista Storica ital. 1884, I, 252 s. a. Fumagalli, Dictionnaire géogr. d'Italie, Florence 1905, p. 211 s.

[2] Motta, Arch. Storic. Lombardo, 1895, p. 150.

[3] Reichart, Beiträge zur Incunabelkunde, 1895, p. 265, states, without giving his source, that the rich Milanese citizen Phil. de Lavagna calls Ant Zaroto from Parma to do printing for him in Milan and that he made a contract with him for two years in 1470.

whence he had come. By ducal authorisation of 5 May 1472 he is allowed to take away free of duty his instruments and "tuti queli libri facti et lavorati ad stampi[1]. They have not come down to us.

On 4 June 1472, that is exactly five months after Lavagna had made his first agreement with Gianmatteo Ferrari in Pavia, the first typographical association is formed in Milan[2]. A three years agreement is made between Antonius Zarotus, who already had printed, signed and dated a book (August 1471), Orsoni, a priest of Cremona, Gabriel Paveri, a professor of Piacenza, Antonio de Castiglione, a Milanese nobleman, and Cola Montano, the humanist. Cola Montano deserted and entered into another agreement, on 6 August 1473, with Lavagna and Christoph Valdarfer, a German printer from Regensburg who had already printed during the two previous years in Venice. Montano and Lavagna were to provide the money for the setting up of two presses; Valdarfer was to do the printing of the books ordered by the two others.[3] Valdarfer is usually counted as the third printer of Milan and he is known to have continued printing until 1488. It is to be noted that despite his agreement with Montano and Lavagna he printed two books at the expense of Castiglione, one of the partners of the dissolved Zarotus company, in 1475.

This resumé of what we actually know about early Milanese printing accentuates the fact that we have to read between the lines in order to get a comprehensible picture of what really happened. It is very clear that already before 1470 princes and nobles, lawyers, physicians and other academicians, moneyed investors and merchants, were preparing to bring the new art from beyond the mountains into the Lombard capital which was striving just then to out-do all the other principalities. And it is equally certain that there were many who knew Gutenberg's technique of casting type and of printing, who were ready to leave their troubled lands

[1] See facsimile of document in Fumagalli loc. cit. p. 212.

[2] Sassi, Hist. typ. Mediol. Proleg. p. xcvii and Fumagalli loc. cit. p. 213. Reichart, loc. cit. gives the date as May 1472.

[3] On this occasion Valdarfer submitted a specimen of his work in Roman type which, with the contract, is still preserved in the Archivio Notarile in Milan. See facsimile Fumagalli, loc. cit. p. 214.

on the Rhine and make places for themselves in Italy and elsewhere. What we can find among the records of the earliest enterprises forcibly leads us to assume that at many places, before such records were made at all, there were presses set up where there was a call or a need for them. By far the greatest opportunity to printers from the outside was offered by Venice, then the true Italian metropolis, and, as we know, they abundantly availed themselves of it. Greater liberty, liberality and respect for their individuality gave them the best possible chances to apply profitably their talents. The patronage of the various princes in other parts was of a more doubtful character; the printer was made use of to add lustre to the court; "bossism", to use an American expression, was rampant and, like his princely master, the "boss" of an enterprise wanted to get all the glory for somebody else's work. This held good particularly for Milan with the rather forced and uneasy splendor of the Sforza dynasty. The reception of the new art illustrates this tendency well. While in Venice some 150 presses could be established by artisans who were allowed and proud to call themselves by name in the books printed by their hands, from Johannes of Speier and Nicolas Jenson to the great Aldo Manuzio, we find among the thirty presses assigned to Milan in the same space of time hardly two or three names of men whom we can clearly recognize as masters of their craft. The rest are merely "bosses" behind whose loudly heralded names some very capable artisans were hidden. I believe that it is for this reason largely that the early history of printing in Milan presents so many puzzles. The names, the origin, the life history of the real printers, are hidden.

That Lavagna was the arch-boss of printers in Milan can seem little doubtful to anyone who follows his career in the documents and in the books which bear his name. Very likely he was a shrewd trader who knew his world and understood how to exploit it for his profit and prestige. But practically every press of Milan was in some way and at some time in connection with him, so he has a well merited place in the histvry of early printing in Milan, but it is an unsympathetic one and one cannot help feeling grateful that men like Zaroto and Valdarfer escaped his clutches early in the game.

Probably the least merit belongs to Lavagna in the production of the medical works which we have considered. On his part they were merely a speculation on the academic market of neighbouring Pavia. There were the professors, not only willing to furnish their manuscripts but ready to pay for the printing. Eager to out-do

each other, they would give personal attention to the correct rendering of their works in print. They or their academic associates and dependents would act as proof readers and even as sale agents. The real printer, with his tools and his own types, was found in Milan where all roads converged from the North, West and East. Or perhaps he had come to Pavia, an impecunious wanderer, far from home, eager to find work and at the same time to draw profit intellectually out of the university, the fame of which had reached him. In our special case we have no direct information about the printer who may have worked for Lavagna and where the press was actually set up. If the types that were used for the three medical books could be found in other books printed in Milan, it would be entirely unreasonable to assume that they came from any other place. But since we know that they were exclusively used for these books and that the fount was actually in Pavia in 1473, the documents which have been cited do not rob Pavia with certainty of the honor of having participated so early in the introduction of printing. Lavagna's domicile was in Milan and therefore da Gradi's Practica must be assigned to this town, as also the Avicenna and Mesue. While this has been settled formally by Majocchi, we will do well to remember the important share the medical men in Pavia evidently bore in the achievement and that neither medicine nor printing are heavily indebted to Lavagna, as the bibliographic determination alone would lead us to think.

It is curious that we know of no other book printed in Pavia until 1476 in May, when Antonio Carcano comes on the scene with his first signed book and only on 19 December 1478 he finishes the first edition of Mundinus' Anatomia[1]. We have no explanation for the interval of 1473—1476. Possibly some books belong here that were issued unsigned and undated. Further search will perhaps show an uninterrupted activity. During these years the Milanese presses controlled by Zaroto and Lavagna turn out several books, the former, three medical ones, one of which is a book, already mentioned by Gianmatteo Ferrari's colleague Giov. Marliani. After that time printing becomes an accepted institution, books are printed in rapid succession and in larger editions. More copies have survived which allow comparisons and there is also far more documentary evidence available. But a good deal more can be learned about the very first efforts which seem shrouded in obscurity when we consider the matter

[1] Hain-Copinger 11634, Scholderer 156.

only from the bibliographer's view-point, or only from that of the historical student who disregards bibliographical details. In this regard a wish has been expressed lately by the distinguished Dutch bibliographer, Kruitwagen, which I believe can be applied to medical historical research most appropriately and which therefore I may be permitted to repeat here textually with my warm personal endorsement[1]:

„Mehrmals wurde schon von Andern und auch vom Unterzeichneten betont, daß es einerseits für die Literaturgeschichte von größter Wichtigkeit ist, daß die Inkunabelforscher stets Rücksicht nehmen auf das literäre Element, und daß andererseits die Literarhistoriker bei ihren Untersuchungen von Inkunabeln womöglich auch auf die historisch-typographischen Elemente achten mögen. Hoffentlich wird dieser Artikel dazu beitragen, das gegenseitige Interesse, welches die Inkunabelbibliographie und die Literaturgeschichte aufs engste miteinander verknüpft, nochmals in ein helles Licht zu stellen, und auch die entschiedensten Gegner dieser ‚Verwechslung von Bibliographie mit Literaturgeschichte' davon zu überzeugen, daß die von Haebler und seinen Kollegen in dieser Hinsicht aufgestellten Regeln für die Beschreibung der Inkunabeln die ‚alleinseligmachende' Methode bilden."

The physician or medical teacher who to-day takes an interest and develops for purposes of his craft and science for instance the phonograph and cinematograph, or who, like a venerated and distinguished medical friend of ours across the seas, obtains an aeroplane pilot's license at seventy or so, is a pioneer on new and little trodden paths, soaring above the line of more quiescent average multitudes, and has for these reasons alone a claim on historic immortality. And viewed from this angle, our colleagues there in the Alma Mater of the ancient Lombard capital deserve our interest in their efforts to develop the new art which has revolutionized the world more than any other. Regrettable it is that just at the end of our period, in fact during the very last years of the quattrocento, war brought to an end, for a time, these peaceful efforts in the Duchy of Milan. The „soldateska" was in power with destructive effect; Pavia Castello, robbed of its library, went up in flames. Very few of the book treasures

[1] P. B. Kruitwagen: Das Antidotarium Animae etc. In Wiegendrucken und Handschriften. Festgabe Konrad Haebler. Leipzig, Hiersemann, 1919, p. 106.

are preserved, scattered over the wide world so that only with great pains we can find the few which allow us to piece together our story of past times, and with sadness at the ways of man we notice that many bear on their leather cover the golden line: "de Pavye au roi Louis XII", grateful, however, that they were preserved at all.

While the above article was in press we have received definite information from the Morgan Library in New York, to the effect that Mr. Morgan bought in 1908 a copy of the two parts of Da Gradi's Practica, discussed above. This copy is the one described by Reichling, but for some reason not noted in the Census. Therefore there will be two complete copies of this work in America after our copy of the first part has reached the Library of the Surgeon General, while there is none apparently in Europe. A. C. K.